

**REMARKS**

Applicants are in receipt of the Office action mailed on March 10, 2003 (Paper No. 8) and thank Examiner Rhee for her detailed examination of the application. Claims 1-12 are rejected. By this Amendment, claims 4 and 8 have been amended and claims 1-12 remain pending. No new claims have been added. Favorable consideration is respectfully requested in light of the amendments and the following Remarks.

**Claims Rejected Under 35 U.S.C. §112**

Claims 4 and 8 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Office Action states the term “adapted” is a relative term that is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicants respectfully traverse the rejection.

Claim 4 has been amended to clarify the function of the exhaust manifold on an engine. Claim 8 has been amended to clarify the function of the inner metal layer of the heat shield. Accordingly, the rejection is believed to be overcome and withdrawal is respectfully requested.

**Claims Rejected Under 35 U.S.C. §103**

Claims 1-12 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,590,524 to Moore, III et al (hereinafter referred to as “Moore, III et al”) in view of U.S. Patent No. 5,958,603 to Ragland et al (hereinafter referred to as “Ragland et al”). For at least the following reasons, Applicants respectfully traverse the rejection.

Moore III et al discloses a damped heat shield 10 mounted to an exhaust manifold 11 of an internal combustion engine 12. The damped heat shield 10 has cutouts 41, 42 and semi-circular indents 43, 44 around the bolts. The cutouts 41, 42 are areas where the material has been completely removed to allow two bolts to pass through. The indents 43, 44 also include areas where material has been removed to allow the remaining two bolts to pass through. *See col. 9, lines 1-5*. By definition, a cutout is a space or hole left after cutting; a bead is a projecting rim, band or molding. *See Merriam-Webster online dictionary definitions*, attached as Exhibit A. A cutout, which requires material to be removed, cannot also be a projecting rim, band or molding. Accordingly, the cutouts 41, 42 and indents 43, 44 of Moore et al do not form a series of orthogonally disposed beads extending over the body of the shield. Furthermore, since Moore et al does not teach a series of orthogonally disposed beads extending over the body of the shield, it

can not teach a plurality of arcuate nodes positioned at the intersections of each of the orthogonally disposed beads.

Further, Moore III et al does not disclose that the outer metal layer 13 of the heat shield 10 is folded over to encase mating edge of the insulation layer 16 and the inner metal layer 14. First, as disclosed in Moore III et al, layer 16 is not an insulating layer, but rather a non-ferrous metal layer. *See col. 4, lines 48-50*. Further, as is clear from Figure 3, the edge of the inner layer 14 and non-ferrous metal layer 16 are not mating. Instead, the edge of inner layer 14 is inboard of the edge of non-ferrous metal layer 16. The edge of outer layer 13 is inboard of the edge of non-ferrous metal layer 16. Finally, the edge of inner layer 14 and non-ferrous metal layer 16 are not encased by the boundary of the outer layer 13 as the edges of both the inner layer 14 and the non-ferrous metal layer 16 extend past the boundary of outer layer 13.

Applicants agree with the Examiner that Moore, III et al fails to disclose at least one edge portion of the heat shield comprising outwardly flared undulations. In addition, Moore, III et al also fails to disclose that the outwardly flared undulations define protuberances spaced apart along the one edge portion of the heat shield to counteract any undesirable stiffness.

The Office Action relies on Ragland et al to teach at least one edge of the heat shield comprising outwardly flared undulations and that the outwardly flared undulations define protuberances spaced apart along one edge portion of the heat shield. However, the Ragland et al reference fails to make up for the deficiencies of Moore et al. The Ragland et al reference teaches a wall section 4 with five metal foil layers that are pleated together and folded on top of each other. The folds, when compressed on top of each other, interlock at least some and preferably all of the metal foil layers together. *See col. 10, lines 27-29*. The interlocked wrinkles or folds are then curled to formed an edge roll 5. The edge roll 5 further interlocks the metal foil layers. *See col. 10, lines 32-35*. Compressing together the five metal foil layers adds stiffness to the wall 4. However, once the five metal foil layers are compressed together, they do not further comprise outwardly flared undulations. In contrast, Applicants claimed invention teaches a heat shield wherein at least one edge portion of the heat shield comprises outwardly flared undulations. The outwardly flared undulations define protuberances spaced apart along the edge portion of the heat shield. The protuberances counteract any undesirable stiffness in the crushed metal edge imparted by dies during manufacturing of the shield 10. Ragland et al teaches away from Applicants claimed invention because Ragland et al requires the folds to be compressed together to add additional stiffness to the edges of the damped heat shield 10. Ragland et al does not teach at least one edge portion of the heat shield comprising outwardly flared undulations and that the outwardly flared undulations define protuberances spaced apart along the one edge portion of the

heat shield. Accordingly, the Ragland et al reference, individually or in combination with Moore et al, do not teach or suggest all the claim limitation of Applicants claimed invention.

Withdrawal of the rejection is respectfully requested.

CONCLUSION

Pursuant to the Office Action and the comments above, it is believed the application is now in condition for allowance. If, however, there are any outstanding issues that can be resolved by telephone conference, the Examiner is earnestly encouraged to telephone the undersigned representative.

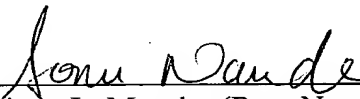
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Respectfully submitted,

Date: June 4, 2003

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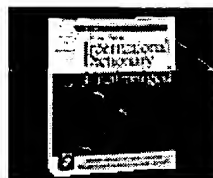
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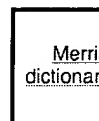
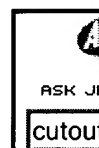
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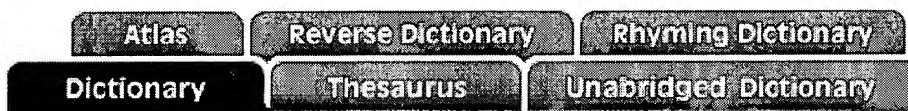
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cut out[1,verb]  
cut out[2,adjective]

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Main Entry: **cut·out**

Pronunciation: 'k&t-"aut

Function: *noun*

Date: 1851

1 : something cut out or off from something else; *also* : the space or hole left after cutting

2 : one that cuts out

3 : an intermediary in a clandestine operation

- **cutout** *adjective*

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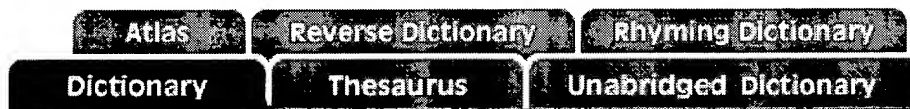
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Main Entry: **<sup>1</sup>bead**

Pronunciation: 'bEd

Function: *noun*

Etymology: Middle English *bede* prayer, prayer bead, from Old English *bed*, *gebed* prayer; akin to Old English *biddan* to entreat, pray -- more at *BID*

Date: before 12th century

1 **a** *obsolete* : **PRAYER** -- usually used in plural **b** *plural* : a series of prayers and meditations made with a rosary

2 : a small piece of material pierced for threading on a string or wire (as in a rosary)

3 *plural* **a** : **ROSARY** **b** : a necklace of beads or pearls

4 : a small ball-shaped body: as **a** : a drop of sweat or blood **b** : a bubble formed in or on a beverage **c** : a small metal knob on a firearm used as a front sight **d** : a blob or a line of weld metal

5 : a projecting rim, band, or molding

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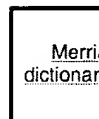
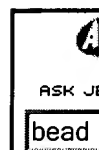
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